

# Data Literacy for All Schools

SLDS Grant Goal 2



NEBRASKA DEPARTMENT OF EDUCATION

# SLDS Goal 2

Provide an on-going and sustainable statewide system of professional development training for data analysis through the Continuous Improvement Process that will be supported by ESU staff developers and the NDE



# Data Cadre

- Create data use and literacy capacity and culture in Nebraska school districts
- Collaborative effort between NDE and ESUCC
  - 9 professional developers from ESUs
  - 5 NDE Representatives
  - Expanded to include representatives from NDE departments and post-secondary



# Data Cadre

- Streamline the trainings around data use to one unified message
- Curriculum being delivered to districts will also be utilized for internal training at NDE so that a common process and language is spoken



# Data Literacies

- Standards document to allow the standardization of expected competencies
- Freedom to utilize existing protocols or materials
- Standard, concept, and indicator scaffolding structure



# Data Literacies

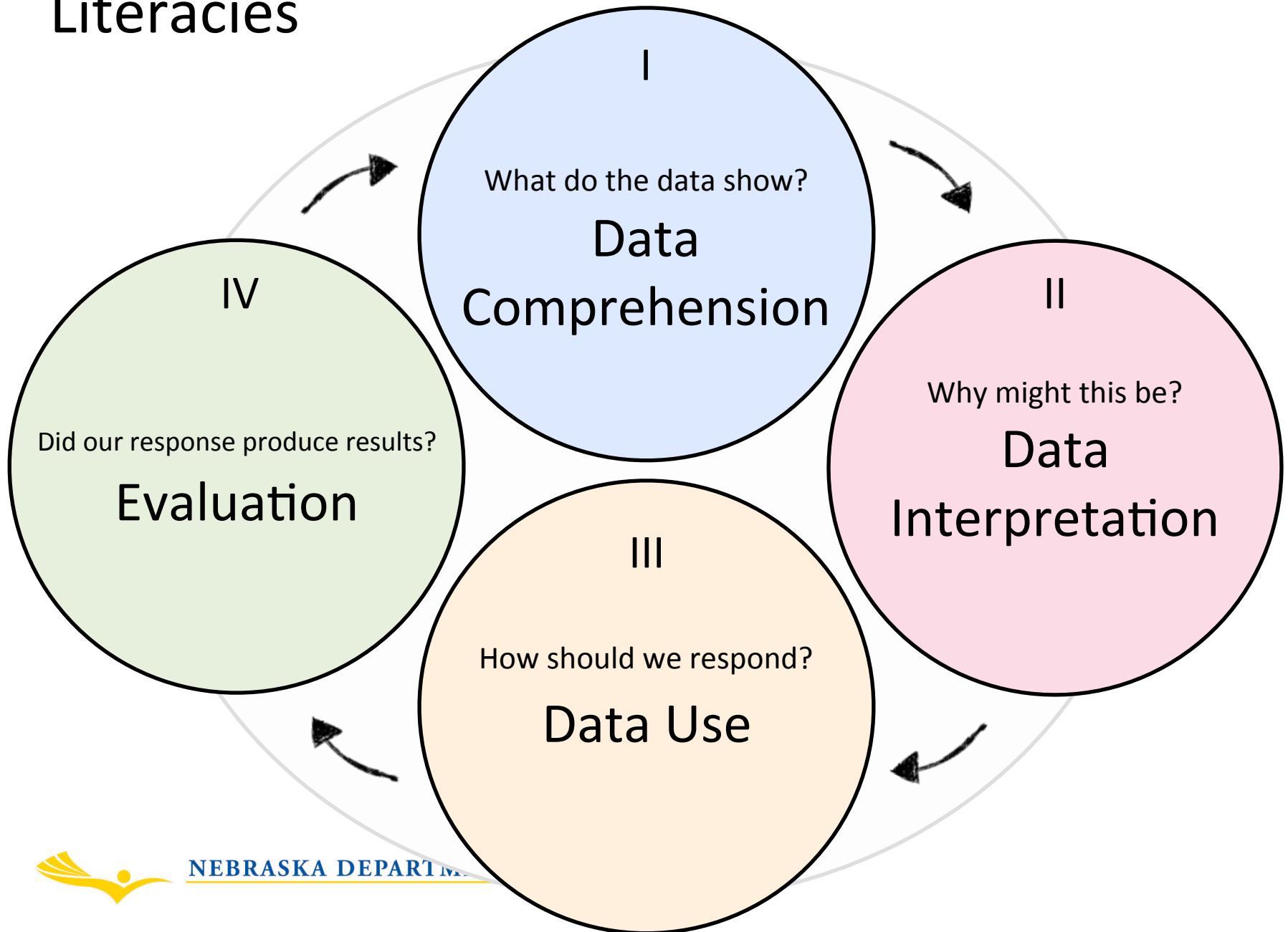
1. Literacies

a. Concepts

i. Indicators



# Literacies



What do the data show?

# Data Comprehension

## Concepts

---

- a. Multiple Measures of Data
- b. Multiple Levels of Data Analysis
- c. Multiple Types of Data and Measurement
- d. Data Literacy
- e. Data Tools and Skills





# Literacy-Concept-Indicators

1. Data Comprehension – What do the data show?
  - a. **Multiple Measures of Data** – Team members will be able to identify four measures of data used in the Continuous Improvement Process and demonstrate understanding of the value of each measure of data.
    - i. Recognize the impact of a quality data culture on data accuracy
    - ii. Identify the four measures of data: demographic, student learning, perceptual, school processes



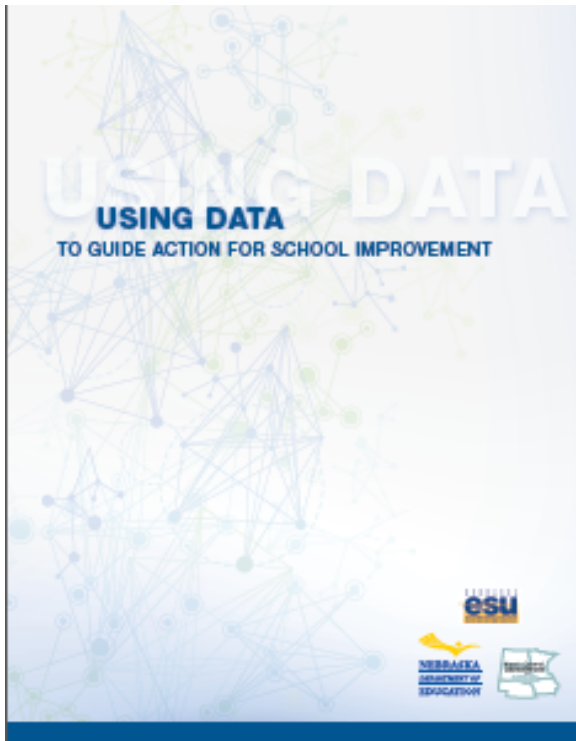
# Literacy-Concept-Indicators

- a. Multiple Measures of Data (continued)
  - iii. State examples and explain the value of each measure of data
  - iv. Name and locate available data sources for each of the four measures at the district, building, grade, classroom, and individual student levels
  - v. Categorize the data sources into the four measures
  - vi. Determine possible data sources for missing data measures
  - vii. Identify groups for disaggregation (i.e. gender, poverty, lep, SpEd, etc.

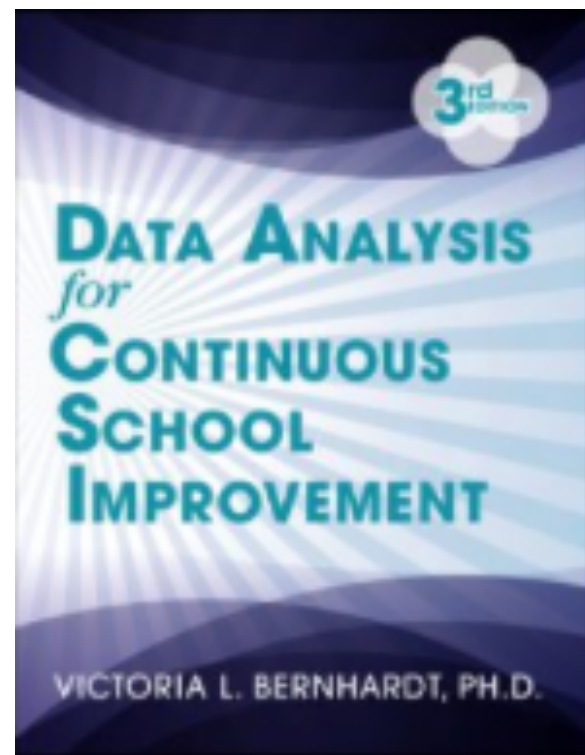


# Data Use Curriculum

Data Analysis for Continuous School Improvement  
Education For the Future  
(EFF, Victoria Bernhardt)



Using Data  
to Guide Action for  
School Improvement  
(AKA Data Guide Book)



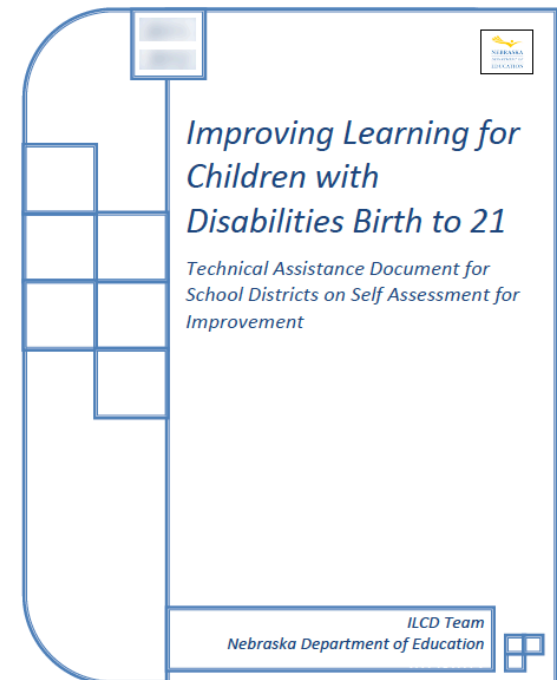
NEBRASKA DEPARTMENT OF EDUCATION



# Data Use Curriculum



- AdvancEd & Frameworks systems and materials
- Special Education data training materials
- Other materials being used to train on data literacy and use



# Contract with Education For the Future (EFF) (Victoria Bernhardt)

## Three days Training for Data Cadre Members in April Day 1

- Trained in teaching the EFF curriculum
- Data Analysis for Continuous School Improvement (using facilitation guides etc.)

## Day 2

- Alignment of EFF materials to the data literacies
- Alignment to the Data Guidebook
- Alignment to other sources being used

## Day 3

- “Chunking” of the material into various time segments  
(Several hours, ½ day , full day etc.)
- Discussion about levels or metering of the training



# Additional Training through CIP

- Two Day Training for All ESU Staff Developers and Technical Group members in July
- **Training for Schools & Districts at the Continuous Improvement Training Workshops Fall 2014 & 2015**
- Additional training and support for schools and districts during the school year from ESU staff developers and NDE



# **National Group**

## **Data Use Standards Workgroup (DUSWG)**

- Create a national document of data skills or literacies
- Present at summer data conference
- Future work to support data use in SEAs and LEAs
- Studies and identification of strategies for developing and maintaining capacity for data work within districts
- Integrate Post-Secondary teacher preparation programs into the process and align the delivery of data use skills to pre-service teachers with those skills being utilized with practicing teachers



# Work with the Comprehensive Center

To assist in the formatting of the data literacy training for internal NDE staff to also incorporate the component of program evaluation

Assist in outlining Nebraska's needs and matching with states or groups that have had success in the area of those needs

- Perceptual data systems
- Data literacy delivery models
- Program evaluation logic models
- Use of Innovation Configurations

Aligns with the work of Teacher/Principal Evaluation

Focus is on developing capacity within Nebraska



NEBRASKA DEPARTMENT OF EDUCATION



# Perceptual Data

- Discussions around the need for a statewide system
- Multiple projects need or will need perceptual data
- Required as a part of the data curriculum



# Timeline

- Fall 2014
  - Training of ½ of Districts/Schools at Fall CIP Workshops
- Fall 2015
  - Training of ½ of Districts/Schools at Fall CIP Workshops
- On-going support from ESUs and NDE



# Future Plans

## Training Levels

- a. **Multiple Measures of Data:** Team members will be able to identify four measures of data used in the Continuous Improvement Process and demonstrate understanding of the value of each measure of data.

Indicators	Level I	Level II	Level III
i. Recognize the impact of a quality data culture on data accuracy	I	P	
ii. Identify the four measures of data: demographic, student learning, perceptual, school processes	I	P	E
iii. State examples and explain the value of each measure of data	I	P	E
iv. Name and locate available data sources for each of the four measures at the district, building, grade, classroom, and individual student levels	I	P	E
v. Categorize the data sources into the four data measures	I	P	E
vi. Determine possible data sources for missing data measures		I	P
vii. Identify groups for disaggregation (i.e. gender, poverty, <u>lep</u> , <u>SpEd</u> , etc.)	I	P	E



# Future Plans

- Badging Recognition for Achievement

## Digital Badges

Digital badges are an assessment and credentialing mechanism that is housed and managed online. Badges are designed to make visible and validate learning in both formal and informal settings, and hold the potential to help transform where and how learning is valued.



# Future Plans

- On-demand delivery through a Learning Management System (LMS)
  - Self paced learning
- Training accessible through a LMS at the state, ESU, or district level



# Link to Data Cadre work

- [http://www.education.ne.gov/dataservices/SLDS\\_Grant/Data\\_Cadre.html](http://www.education.ne.gov/dataservices/SLDS_Grant/Data_Cadre.html)

## Data, Research, & Evaluation

Dashboard

Data Cadre

Research

Sustainability

Policy Advisory Committee

Contact

DRE Home Page

SLDS Home Page

## Data Cadre

The Data Cadre is a collaborative professional development effort between The Nebraska Department of Education and the Educational Service Units Coordinating Council.

### General Information

- The focus of the professional development is in the methods, procedures, and best practices in the use and analysis of data to inform and improve instructional practices in Nebraska Schools.

The [Data Literacies](#) are the guiding framework for the statewide professional development initiative.

### Data Reporting System (DRS)

The Data Reporting System (DRS), located at <http://drs.education.ne.gov/> provides student achievement results for Nebraska, school districts and individual school buildings.



[NEBRASKA DEPARTMENT OF EDUCATION](http://www.education.ne.gov)

# Data Literacy and CIP

- All schools need data for the Continuous Improvement Process
- DRS trainings took place at the Fall 2013 CIP workshops
- The Continuous Improvement Process provides a framework to teach data literacy



# EDUCATION FOR THE FUTURE

400 West First Street, Chico, CA 95929-0230  
Tel: (530) 898-4482 ~ <http://eff.csuchico.edu>

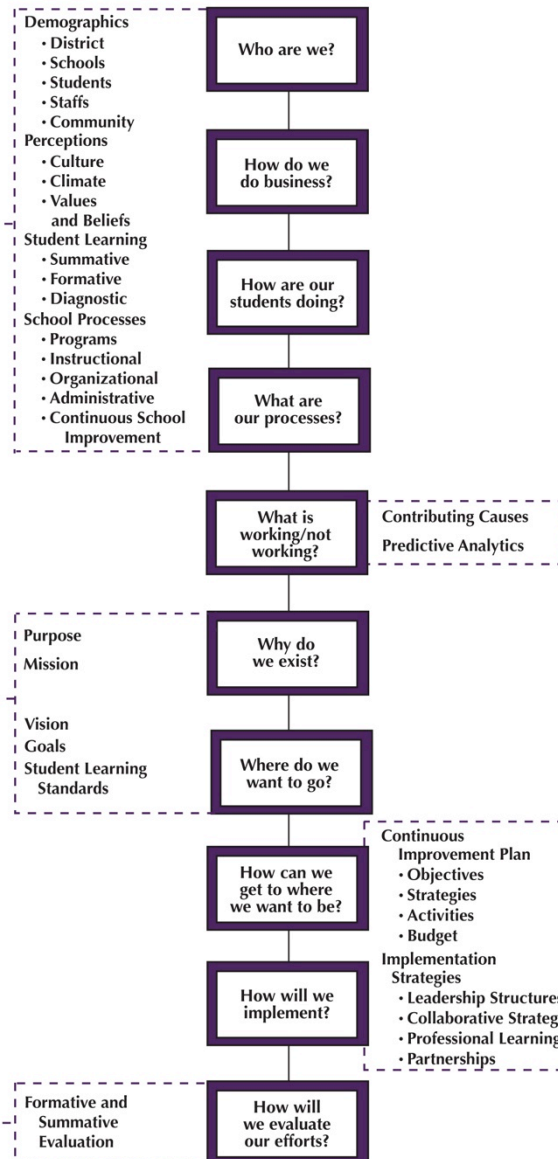
Bradley J. Geise  
[bgeise@csuchico.edu](mailto:bgeise@csuchico.edu)

## THE ESSENTIAL QUESTIONS FOR SCHOOL IMPROVEMENT

Data Literacy 1

What do the data show?

Where are we now?



Data Literacy 2

Why might that be?

How did we get to where we are?

Data Literacy 3

How should we respond?

How are we going to get to where we want to be?

Data Literacy 4

Did our response produce results?

Is what we are doing making a difference?



# Analyzing Data for Continuous School Improvement Planning

## Where Are We Now?

- Who are we?
  - Demographic Data
- How do we do business?
  - Perceptual Data
- How are our students doing?
  - Student Learning Data
- What are our programs and processes?
  - Process Data



# Demographic Data - Who are we?

Demographics describe human population characteristics

- number of students in the school
- number of students with special needs
- number of ESL students
- age or grade of students in each cohort
- socio-economical level of student population
- teacher and student attendance
- ethnicities/races/religious beliefs of the students and teachers in the school
- number of graduates
- number of students who drop out of school each year
- number of teachers by years of experience, and teaching assignments



# Demographic Data - Who are we?

- Demographic data show the philosophy of the school, through indicators of which and how students are disciplined, identified for special education, advanced placement, gifted programs, etc.
- Demographic data show trends and history and can be used to predict future trends and plan for the future



# Who are we?

## DEMOGRAPHIC DATA

1. What are Somewhere School's demographic *strengths* and *challenges*?

*Strengths*

*Challenges*

2. What are some *implications* for the Somewhere continuous school improvement plan?

3. Looking at the data presented, what other demographic data would you want to answer the question *Who are we?* for Somewhere Elementary School?



NEBRASKA DEPARTMENT OF EDUCATION

# Perceptions – How do we do business?

Perceptions data are important to continuous school improvement because they can tell us what students, staff, and parents are thinking about the learning organization, and answer the continuous school improvement question, *How do we do business?* This question is answered through assessing the school's culture, climate, and organizational processes.



Determine Purpose

Determine Content

Develop Instrument and Pilot

Collect the Data

Analyze Results

Report Results

Share & Review Results

Use Results

# Perceptual Data - How do we do business?

If we want to know what students, staff, and parents perceive about the learning environment, we need to ask them.



NEBRASKA DEPARTMENT OF EDUCATION

# Perceptions – How do we do business?

**TABLE FOR ANALYZING PERCEPTIONS DATA**

Perceptions data are important for continuous school improvement planning because they reveal what students, staff, and parents are thinking about the learning environment. Since humans cannot act differently from what they value, believe, or perceive, it is important to know what each constituency is perceiving about the learning environment to assist with knowing what to change to create a learning environment that everyone perceives as helpful. You may also choose to analyze your perceptions data results using strengths, challenges, and implications (Figure H-1).

	Student Questionnaire	Staff Questionnaire	Parent Questionnaire	Agreements Across Questionnaires	Disagreements Across Questionnaires
General feel of questionnaire (positive, neutral, negative)					
Most positive items					
Neutral items					
Negative items					
On which items are there differences in subgroups? (i.e., disaggregated responses)					
Implications for the Continuous School Improvement Plan					



# **Student Learning Data**

## **How are our students doing?**

- Student learning data show if schools are meeting the needs of all students and uncover strengths in learning and areas for improvement.

### **Summative—Formative—Diagnostic**

- Student learning data come from screening assessments, diagnostic assessments, classroom assessments, classroom assignments and activities, formative assessments, state/provincial assessments, performance and standards assessments, and grades.





# Student Learning Data

Where are we now?

- Requires a synthesis of student learning data in all subject areas, disaggregated by student demographic groups, by teachers, by grade levels, by following the same groups of students (cohorts) over time, as well as looking at individual student growth.



# Student Learning Data

## STRENGTHS, CHALLENGES, IMPLICATIONS FOR ANALYZING STUDENT LEARNING DATA

Use the template below to record your thinking *as you review your student learning data*. Also use this for moving individual thoughts to small-group thinking, and then to whole-group thinking.

STUDENT LEARNING DATA	
1. What are the school's student learning <i>strengths</i> and <i>challenges</i> ?	
<i>Strengths</i>	<i>Challenges</i>
2. What are some <i>implications</i> for the continuous school improvement plan?	
3. Looking at the data presented, what other student learning data would you want to answer the question <i>How are our students doing?</i>	



# What are our Processes?

- School processes are actions administrators and teachers take to achieve the purpose of the school—the vision.
- School processes are the only measures over which we have almost complete control in the education setting.



# What are our Processes?

- Programs
  - Planned series of activities and processes, with specific goals
- Instructional
  - the techniques and strategies that teachers use in the learning environment.
- Organizational
  - those structures the school puts in place to implement the vision.
- Administrative
  - elements about schooling that we count, such as class sizes.
- Continuous School Improvement
  - processes—the structures and elements that help schools continuously improve their systems.



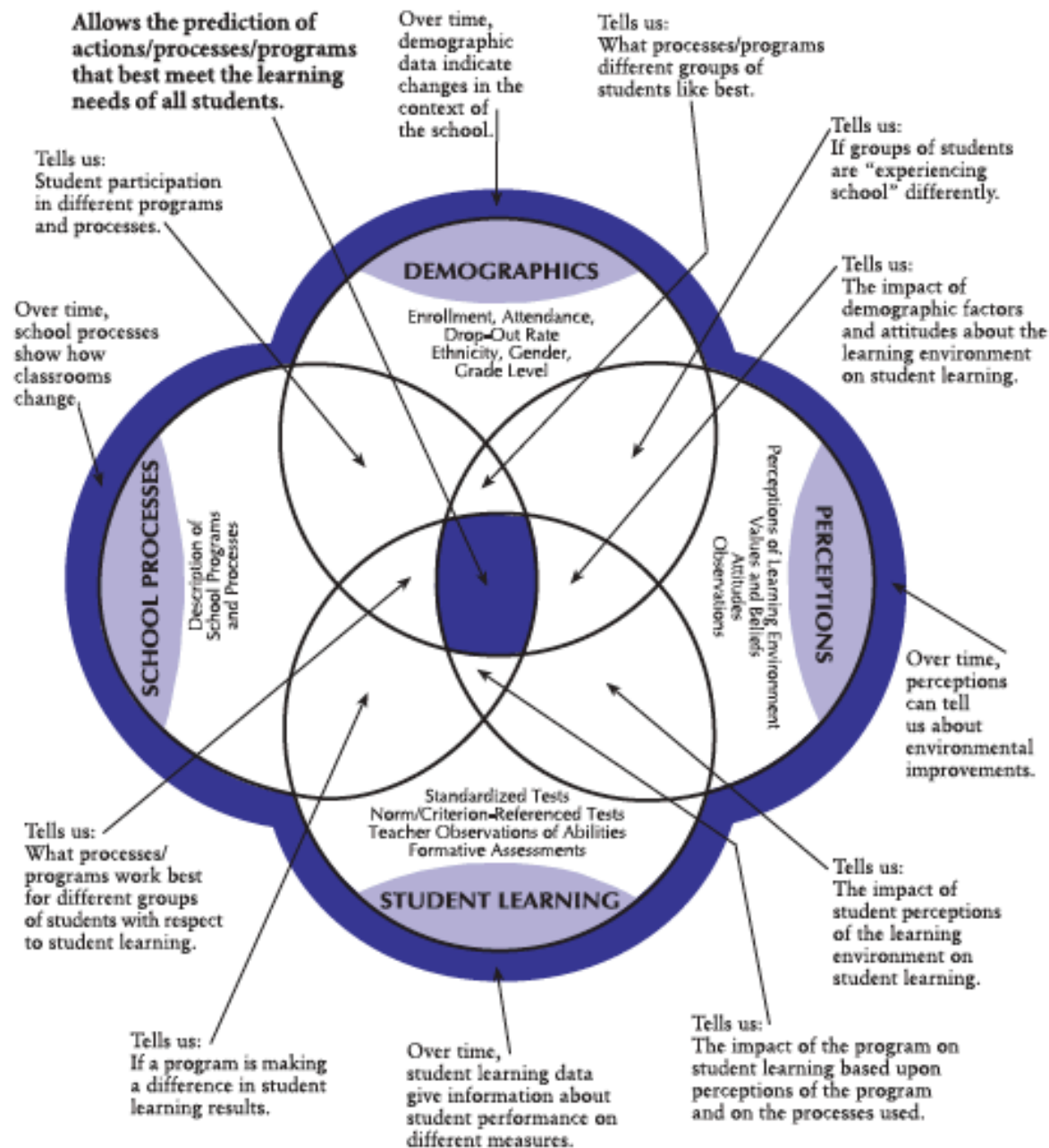
# What are our Processes?

## HOW TO ANALYZE SCHOOL PROCESSES DATA

- Step 1. *List the programs and processes being used in your school.*
- Step 2. *Analyze the lists of programs and processes.*
- Step 3. *Analyze the programs and processes using the Measuring Programs and Processes Table.*
- Step 4. *Use flowcharts to describe and visualize how a program or process is to be implemented.*



**Figure 2.2**  
**MULTIPLE MEASURES OF DATA**



# Two Way Intersections

Intersections	Can Tell Us—	For Example
<b>Two-Way Intersections</b>		
<b>Demographics by Student Learning</b>	If subgroups of students perform differently on student learning measures.	<i>Do students who attend school every day get better grades than students with absences?</i>
<b>Demographics by Perceptions</b>	If subgroups of students are experiencing school differently.	<i>What are the differences in students' perceptions of the learning environment, by number of student absences?</i>
<b>Demographics by School Processes</b>	If all subgroups of students are represented in the different programs offered by the school.	<i>What are the differences in attendance by program enrollment? In other words, what are the attendance rates of students in AP, Gifted, Basic Math, etc.</i>
<b>Student Learning by School Processes</b>	If different programs are achieving similar student learning results.	<i>Did students who were enrolled in interactive math programs this year perform better on standardized achievement tests than those who took traditional math courses?</i>
<b>Student Learning by Perceptions</b>	If student perceptions of the learning environment have an impact on their learning results.	<i>Do students with positive attitudes about school do better academically, as measured by teacher-assigned grades?</i>
<b>Perceptions by School Processes</b>	If students perceive programs and processes differently.	<i>Is there a difference in how students enrolled in different programs perceive the learning environment, by teacher, by student reading level, and by type of differentiation?</i>





# Three and Four Way Intersections

Three-Way Intersections		
<b>Demographics by Student Learning by Perceptions</b>	The impact demographic factors and attitudes about the learning environment have on student learning.	<i>Do students of different ethnicities perceive the learning environment differently, and do they score differently on standardized achievement tests in patterns consistent with these perceptions?</i>
<b>Demographics by Student Learning by School Processes</b>	The impact of specific programs on different subgroups of students, as measured by subgroup learning results.	<i>Which program is making the biggest difference this year with respect to student achievement for at-risk students, and is there one group of students that is responding "better" to the processes?</i>
<b>Demographics by Perceptions by School Processes</b>	What programs different students like best, or the impact different programs have on student attitudes.	<i>What instructional process did high absentee students respond to best with respect to perceptions?</i>
<b>Student Learning by School Processes by Perceptions</b>	The relationship between the processes students prefer and learning results.	<i>Is there a difference in students' reports of what they like most about the school that is connected to whether they participate in extracurricular activities? Do these students have higher grade point averages than students who do not participate in extracurricular activities?</i>
Four-Way Intersections		
<b>Demographics by Student Learning by Perceptions by School Processes</b>	What processes or programs have the greatest impact on different subgroups of students' learning, according to student perceptions, and as measured by student learning results.	<i>Of the students with higher than desired absentee rates, which instructional processes did they prefer, and which ultimately helped them perform well?</i>





# Going Deeper into the Data

## Start with a Purpose

Deeper questions for: <i>Why are students not scoring better on the state 8<sup>th</sup> grade math assessment?</i>	Intersections Needed
How did 8 <sup>th</sup> grade students score on the state math assessment? How did previous 8 <sup>th</sup> graders score, and how did these 8 <sup>th</sup> graders score as 3 <sup>rd</sup> , 4 <sup>th</sup> , 5 <sup>th</sup> , 6 <sup>th</sup> , and 7 <sup>th</sup> graders?	Student learning math results analyzed by proficiency levels and grade, over time.
Which students are proficient and which ones are not, by demographics?	Student learning results by demographics, e.g., gender, ethnicity/race, language proficiency, learning disabilities, indicators of poverty, mobility.
Of the students not proficient, what do they know, what do they not know? Is it different for different student groups?	Student learning results by item analysis, and by demographics, e.g., gender, ethnicity/race, language proficiency, learning disabilities, indicators of poverty, mobility.
Are there differences by teacher and student group?	Student learning results by item analysis, by teacher (school process), and by student group (demographics).
How are math concepts being taught?	School processes data by teacher.
What are students' perceptions of why they did not score well? What are teachers' perceptions of why students did not score well?	Student and teacher perceptions.





**NEBRASKA DEPARTMENT OF EDUCATION**

# Be Involved

## Attend the Fall CIP Workshops



---

You are invited to a School Improvement Workshop:

### **“The Power of Collaboration in Continuous Improvement”**

Sponsored by AdvancED-Nebraska, Nebraska Department of Education (NDE),  
Nebraska Council for School Administrators (NCSA), and the Educational Service Units (ESUs)



**NEBRASKA DEPARTMENT OF EDUCATION**





Please complete your feedback form.



NEBRASKA DEPARTMENT OF EDUCATION